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Office of the Director

PROPOSED EROSION CONTROL AND SAND REPLENISHMENT
AT KAILUA BEACH

Statement for U.S. Army Corps of Engineers Public Hearing
6 December 1977
by J.F. Campbell and D.C. Cox

Considered at this hearing is a proposal to add 15,000 cubic yards of sand artificially to Kailua Beach, extending it about 100 feet, and to install a beach protective device known as a "Sandgrabber" at the southeast end of the beach. Kailua Beach has retreated in recent years, and a launching ramp at the southeast end is threatened. The proposed project will tend to restore conditions to what they were a few years ago. However, several questions should be addressed.

Why has the beach retreated?
Will the proposed measures remove the cause of retreat?
Will the proposed measures prevent retreat in the future?
What benefits or detriments will the proposed project have?
Is there an immediate need for the project?

In commenting on the proposed project in August 1977, the Environmental Center noted the need for investigation of the history of shoreline changes at Kailua. Such an investigation, based on aerial photographs, was reported by Edward K. Noda Assoc. in September and brought to our attention in November. The

investigation indicates that beach was cut back farther in 1949 than it is now; that between 1949 and 1970 it advanced, on the average, 140 feet (the trend reversing between 1958 and 1963); and that since 1970 the beach has retreated to the present position. The investigation has indicated futher that natural changes in the wave climate are quite capable of inducing accretion and erosion of the beach to the extent observed. We earlier called attention to rumors that sand has been artificially removed from the beach system at the mouth of Kaelepula Stream. These rumors should be pinned down. In the light of Noda's investigation, however, there is no reason to suppose that the retreat of the beach is not predominantly natural, and there is every reason to assume that it will expand again in the future, although not necessarily before some further retreat.

The proposed remedy will not remove the natural causes of beach erosion and accretion, nor will it prevent erosion in the future whenever the natural conditions induce erosion. The artificial addition of sand will, of course, extend the beach, but if the extension is during a period of natural erosion, the erosion will not be stopped, and indeed the rate of erosion may be greater with the artificial extension than it would be otherwise. The installation of the Sandgrabber, if it works, may control erosion at the southeast end of the beach, and may even induce accretion there, but in doing so will reduce the movement of sand to replenish the beach farther northwest. This installation has special rationale only if accretion or erosion control is especially desirable in the vicinity of the launching ramp at the southeast end of the beach.

Detriments associated with the artificial placement of sand on the beach include: 1) depreciation of a sand resource somewhere and, possibly; 2) making the beach especially vulnerable to erosion due to its being out of equilibrium.

Detriments associated with the installation of the Sandgrabber include: 1) An esthetic detriment, 2) a hazard to bathers in the vicinity, and 3) a hazard to those launching boats or pulling them up on the beach in the vicinity. None of these detriments will continue when the Sandgrabber has been covered with sand, if it is effective, but the Sandgrabber will cease to be effective when that happens. But these detriments will reoccur when natural erosion again removes the accumulated sand.

The proposed installation of the Sandgrabber will make possible the assessment of the effectiveness of this system for beach erosion control, which has not previously been tried in Hawaii. This benefit will be accrued only if a well-designed program of monitoring and analysis is instituted. We are unaware of any plans for such a program. We should also call attention to the fact that trial of the Sandgrabber system is proposed also at Kualoa Point where the beach history supposedly involves systematic erosion, rather than cyclical erosion and accretion as at Kailua. It may be much more difficult to prove the effectiveness at the Sandgrabber at Kailua if the beach in general accretes in the next few years for natural reasons.

We suspect that the proposal to undertake the project in question stems as much from concerns with the launching ramp as with

concerns with overall beach retreat, and that the natural processes that may be expected to cause accretion as well as erosion have until recently been overlooked. The appropriateness of continuing the permanent, fixed launching ramp at the present site should be reexamined.

We note that the Noda Associates report is but one part of a Corp of Engineers study of Kailua Beach, undertaken at the request of the City and County of Honolulu and the State of Hawaii, and still incomplete. Since there appears to be no immediate danger to valuable property, we suggest that this project be deferred until such time as the Corp of Engineers report on their work and make recommendations.